APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/002,817	11/02/2001	Hung T. Nguyen	01-629	6850

24319	7590	12/02/2004	

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EXAMINER
TSAI, HENRY

ART UNIT	PAPER NUMBER
2183	

DATE MAILED: 12/02/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

	Application No.	Applicant(s)
Office Action Summary	10/002,817	NGUYEN, HUNG T.
	Examiner	**Art Unit**	
	Henry W.H. Tsai	2183	

-- *The MAILING DATE of this communication appears on the cover sheet with the correspondence address* --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE _3_ MONTH(S) FROM
THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed
after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any
earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on _04 October 2004_.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is
closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) _1-23_ is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) _1-23_ is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All b)☐ Some * c)☐ None of:

      1.☐ Certified copies of the priority documents have been received.

      2.☐ Certified copies of the priority documents have been received in Application No. _____.

      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage
application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1)☐ Notice of References Cited (PTO-892)
2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3)☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
    Paper No(s)/Mail Date _.

4)☐ Interview Summary (PTO-413)
    Paper No(s)/Mail Date. _____ .
5)☐ Notice of Informal Patent Application (PTO-152)
6)☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 102

1.   The following is a quotation of the appropriate paragraphs

of 35 U.S.C. 102 that form the basis for the rejections under

this section made in this Office action:

A person shall be entitled to a patent unless –

> (b) the invention was patented or described in a printed publication in this
> or a foreign country or in public use or on sale in this country, more than one
> year prior to the date of application for patent in the United States.

2.   Claims 1-23 are rejected under 35 U.S.C. 102(b) as being

anticipated by Nguyen et al. (U.S. Patent No. 5,832,292)

(hereafter referred to as Nguyen et al.'292).

Referring to claims 1, 9, and 17, Nguyen et al.'292

discloses, as claimed, for use in a wide-issue pipelined

processor (100, see Fig. 1, and see also Col. 2, line 5-7), a

mechanism for reducing pipeline stalls between nested calls,

comprising: a program counter (PC) generator (366, see Fig. 3,

and see also Col. 17, lines 15-17) that generates return PC

values (see Col. 17, lines 13-15, regarding "**new** prefetch

addresses originate from a number of address. A primary source

of addresses is the current IF_PC address provided from the

execution control unit 366") for call instructions (see Col. 17,

lines 42-44, and return address bus 352 in Fig. 3) in a

pipeline of said processor; and return PC Storage (the registers

in the prefetch PC control unit 364, see Col. 17, lines 19-21;

or special registers 412, see Col. 18, lines 49-53 and Fig. 4),

coupled to said PC generator (366, see Fig. 3, and see also Col.

17, lines 15-17) and located in an execution core said processor

(100, see Fig. 1), that stores said return PC values (in the

registers in the prefetch PC control unit 364, see Col. 17,

lines 19-21; or in special registers 412, see Col. 18, lines 49-

53 and Fig. 4) and makes ones of said return PC values available

to a PC of said processor execution of corresponding return

instructions (see also Col. 16, lines 7-21). Note as set forth

in claim 1, Nguyen et al.'292 also discloses the method steps

described in claim 9. As to claim 17, in additional to claim 1,

Nguyen et al.'292 also discloses a digital signal processor (see

Col. 4, lines 23-27), comprising: a pipeline having stages

capable of executing call instructions; a wide-issue instruction

issue unit (issuer 498, se Fig. 5).

    As to claims 2, 10, and 18, Nguyen et al.'292 also

discloses: said PC generator (366, see Fig. 3, and see also Col.

17, lines 15-17) is associated with an instruction issue unit

(issuer 498, se Fig. 5) of said processor.

As to claims 3, 11, and 19, Nguyen et al.'292 also

discloses: said PC generator (366, see Fig. 3, and see also Col.

17, lines 15-17) generates each of said return PC values in a

single clock cycle (see Col. 40, lines 19).

As to claims 4, 12, and 20, Nguyen et al.'292 also

discloses: a return PC queue or said return PC storage has (in

the registers of the prefetch PC control unit 364, see Col. 17,

lines 19-21; or in special registers 412, see Col. 18, lines 49-

53 and Fig. 4) at least as many slots as a number of call

instructions that a fetch/decode stage of said pipeline can

decode prior to grouping. Note the prefetch PC control unit 364

comprises many registers, see Col. 17, lines 19-21; and also the

special registers 412, see Col. 18, lines 49-53 and Fig. 4.

As to claims 5, 13, and 21, Nguyen et al.'292 also

discloses: said return PC values move through registers of said

return PC storage (the registers in the prefetch PC control unit

364, see Col. 17, lines 19-21; or special registers 412, see

Col. 18, lines 49-53 and Fig. 4) as corresponding ones of said

return instructions move through stages in said pipeline (since

the prefetch PC control unit 364 comprises registers storing the

return addresses, see Col. 17, lines 19-21; and also the special

registers 412, see Col. 18, lines 49-53 and Fig. 4).

As to claims 6, 14, and 22, Nguyen et al.'292 also

discloses: said return PC storage (the registers in the prefetch

PC control unit 364, see Col. 17, lines 19-21; or special

registers 412, see Col. 18, lines 49-53 and Fig. 4) makes said

ones of said return PC values available to a PC of said

processor (100, see Fig. 1) as said corresponding return

instructions are in an execution stage of said pipeline (note

IFU 102 connected with IEU 104 through 124 and 126 see Fig. 1).

As to claims 7, 15, and 23 Roth et al.'326 also discloses:

said call instruction is executed in a fetch/decode stage of

said pipeline (since prefetch PC control unit 364 is inside

instruction fetch unit 102, see Figs. 1-3).

As to claims 8, and 16, Nguyen et al.'292 also discloses:

said processor (100, see Fig. 1) is a digital signal processor

(see Col. 4, lines 23-27).

Response to Amendment

3.   Applicant's arguments filed 10/4/04 have been fully

considered but they are not deemed to be persuasive.

Applicants argue that the PC control 366, does not generate

return PC values for call instructions in a pipeline of a

processor as recited in independent claims 1, 9, and 17 (page

10, lines 11-12).   Examiner disagrees with Applicants.   As set

forth in the art rejections above, Nguyen et al.'292 discloses,

as claimed, a program counter (PC) generator (366, see Fig. 3,

and see also Col. 17, lines 15-17) that generates return PC

values (see Col. 17, lines 13-15, regarding "**new** prefetch

addresses originate from a number of address.   A primary source

of addresses is the current IF_PC address provided from the

execution control unit 366") for call instructions (see Col. 17,

lines 42-44, and return address bus 352 in Fig. 3) in a

pipeline of said processor.   Note the return PC values from the

execution control unit 366 is a **new** current value of the PC

which is generally equal to the previous current PC value plus

one.

    Applicants also argue that Nguyen does not teach storing

return PC values or making ones of the return PC values

available to a PC of a processor upon execution of corresponding

return instructions as recited in independent claims 1, 9, and

17 (page 10, lines 18-20). Examiner disagrees with Applicants.

As set forth in the art rejections above, Nguyen et al.'292

discloses, as claimed, return PC Storage (the registers in the

prefetch PC control unit 364, see Col. 17, lines 19-21; or

special registers 412, see Col. 18, lines 49-53 and Fig. 4),

coupled to said PC generator (366, see Fig. 3, and see also Col.

17, lines 15-17) and located in an execution core said processor

(100, see Fig. 1), that stores said return PC values (in the

registers in the prefetch PC control unit 364, see Col. 17,

lines 19-21; or in special registers 412, see Col. 18, lines 49-

53 and Fig. 4) and makes ones of said return PC values available

to a PC of said processor execution of corresponding return

instructions (see also Col. 16, lines 7-21).

Conclusion

4.   **THIS ACTION IS MADE FINAL.** Applicant is reminded of the

extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action

is set to expire THREE MONTHS from the mailing date of this

action. In the event a first reply is filed within TWO MONTHS

of the mailing date of this final action and the advisory action

is not mailed until after the end of the THREE-MONTH shortened

statutory period, then the shortened statutory period will

expire on the date the advisory action is mailed, and any

extension fee pursuant to 37 CFR 1.136(a) will be calculated

from the mailing date of the advisory action. In no event,

however, will the statutory period for reply expire later than

SIX MONTHS from the mailing date of this final action.

Contact Information

5.   Any inquiry concerning this communication or earlier

communications from the examiner should be directed to Dr. Henry

Tsai whose telephone number is (571) 272-4176. The examiner can

normally be reached on Monday-Thursday from 8:00 AM to 5:00 PM.

If attempts to reach the examiner by telephone are unsuccessful,

the examiner supervisor, Eddie Chan, can be reached on (571)

272-4162. Any inquiry of a general nature or relating to the

status of this application or proceeding should be directed to

the TC central telephone number, 571-272-2100.

6.   In order to reduce pendency and avoid potential delays,
Group 2100 is encouraging FAXing of responses to Office actions
directly into **the Group at fax number: 703-872-9306.** This
practice may be used for filing papers not requiring a fee. It
may also be used for filing papers which require a fee by
applicants who authorize charges to a PTO deposit account.
Please identify the examiner and art unit at the top of your
cover sheet. Papers submitted via FAX into Group 2100 will be
promptly forward to the examiner.

HENRY W. H. TSAI
PRIMARY EXAMINER

November 23, 2004